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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/480,193	01/10/2000	Shi-Jun Yang	IR 3556	4031

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Gilbert W Rudman Esq
Elf Atochem North America Inc
Patent Department-26th Floor
2000 Market Street
Philadelphia, PA 19103-3222

EXAMINER

UHLIR, NIKOLAS J

ART UNIT	PAPER NUMBER
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1773

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DATE MAILED: 08/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/480,193

Applicant(s)

YANG ET AL.

Examiner

Nikolas J. Uhler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6 and 8-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6, and 8-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

1. Claims 1-14, and 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Hennig et al. (US4876311).

Hennig et al. teaches an opaque synthetic resin that is useful for the formation of shaped and extended articles (column 2, lines 42-44). This opaque synthetic resin comprises a polymer matrix that contains crosslinked polymeric beads (column 2, lines 58-60). The polymer beads comprise 9.9-59.9% by weight of a monomer such as styrene (column 2, lines 63-64 and column 3, lines 10-43), 40-90% by weight of a second polymer such as methyl-methacrylate (column 2, lines 66-67, and column 3 line 67-column 4 line 10), .1-20% by weight of a crosslinking monomer such as divinylbenzene and allyl-methacrylate (column 3, lines 1-2, and column 4, lines 11-34). The particles have an average particle size between 5-50 microns (column 3, lines 5-7). The polymer matrix comprises acrylic resins, particularly acrylic resins including methyl-methacrylate (column 6, lines 4-8). Most preferably, the polymer matrix and the polymer beads differ in refractive index by .04 (column 5, lines 64-68). Hennig et al. further discloses a polymeric article that is comprised of a mixture of the aforementioned polymeric particles and polymeric matrix. The particles are dispersed within the matrix and then formed into an extended article via extrusion (column 6, lines 8-32). The

polymeric particle/matrix composite is 70-99% by weight of the polymer matrix mixed with 1-30% by weight of the polymeric particles (column 7-8, claim 1).

Although Hennig et al. does not explicitly disclose that the extrusion formed polymeric article described in his specification has a frosted or surface textured finish, the examiner takes the position that these features will necessarily be present. The applicant states in the specification that the requirements for a frosted finish and surface textured article are that "The frosted appearance of the thermoplastic compositions is achieved through the mismatch of the refractive indexes, $\Delta n > 0.02$, of the fine particles and the thermoplastic matrices. The surface texture is controlled by the degree of crosslinking and mean size of the fine particles." (page 3, lines 26-31). The invention described by Hennig et al. clearly meets the refractive index limitation as stated above. In addition to claiming that the particles are crosslinked, the particles described by Hennig et al. can contain up to 20% by weight of a crosslinking agent, leading the examiner to believe that the particles would be "highly" crosslinked. Further, the extruded article described by Hennig et al. clearly meets all of the compositional limitations set forth by the applicant both for the polymeric particles and the extruded article.

Claim Rejections - 35 USC § 103

2. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hennig et al. (US4876311) as evidenced by Minghetti (US6077575).

Hennig et al. teaches all of the limitations required by claim 15 except for those listed below.

Hennig et al. does not teach the incorporation of a colorant within the polymeric particles.

Although Hennig et al. does not disclose that a colorant may be added to the polymeric particle composition, the examiner takes the position that this is a design choice. It has been shown that the addition of a colorant to particles formed in a similar manner to those described by Hennig et al. is known, as evidenced by Minghetti, column 5, lines 35-36. Further, it is well known to add a colorant to any material in order to improve its aesthetic appeal.

Therefore it would have been obvious to one with skill in the art at the time the invention was made to incorporate a colorant into the polymeric particles described by Hennig et al.

One would have been motivated to make this modification because of the improved aesthetic appeal of the resulting article one would expect to gain as a result.

Response to Arguments

4. Applicant's arguments filed 6/26/02 have been fully considered but they are not persuasive. In the instant case regarding the rejection of claims 1-17, the applicant made the following arguments (summarized):

- Applicants have reviewed the references cited and assert that they do not teach the claimed invention. Hennig teaches an opaque plastic which is used for a projection screen. Hennig does not take into consideration a textured surface or translucency, which is the key point of the present invention. The particle size range given by Hennig would give a glossy surface, which is undesirable for frosted or textured applications. In addition, the smaller particles disclosed by Hennig would not possess the mar/scratch resistance of the present invention. Finally, Minghetti does not teach adding colorants to suspension particles to achieve the textured surface and frosted appearance of the present invention.

These arguments are not persuasive. In response to the argument that Hennig does not take into consideration translucency, the examiner respectfully points out to the applicant that in all of the pending claims, no level of translucency is required. Thus, this argument is moot. Regarding the argument that Hennig does not teach a frosted or textured surface. The examiner respectfully directs the applicant to the sections of this and the prior office action wherein the examiner states, " the polymer matrix and the polymer beads differ in refractive index by .04 (column 5, lines 64-68)." The applicant in claim 5 requires that the frosted appearance be achieved through the mismatch of refractive indices of the polymeric particles and the polymer matrix by greater than .02. As written above, Hennig clearly teaches the compositional requirements for both the matrix and the particle required by claim 5, and clearly teaches the required refraction index mismatch. Thus, Hennig meets the limitations required for a frosted appearance. Regarding the particle size range, the examiner directs the applicant to the sections of this and the prior office action wherein the examiner states, "The particles have an average particle size between 5-50 microns (column 3, lines 5-7)." This range clearly encompasses the range required by the applicant in the claims, and it has long been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Regarding the arguments directed towards scratch/mar resistance, the examiner once again respectfully points out that in all of the pending claims, a required level of scratch/mar resistance is never presented. Thus, this argument is moot. Finally, regarding the arguments towards Minghetti, the examiner

agrees that Minghetti does not teach adding colorants to suspension particles to achieve a frosted or textured surface. Rather Minghetti teaches adding colorants to suspension particles formed in a similar manner to those of Hennig for the purpose of changing their appearance. The examiner has pointed out in this and the prior office action that the addition of pigments/colorants to **any** material for the purpose of enhancing aesthetic properties is well known. Thus, the addition of pigments to particles such as those described in Hennig would have been obvious to one with ordinary skill in the art at the time the invention was made.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhler whose telephone number is 703-305-0179. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0389.

WU
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August 2, 2002

V. Chen
Vivian Chen
Primary Examiner